

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for protecting packet transmissions by a multi-mode wireless communication station operating in a wireless network, the multi-mode wireless communication station configurable to transmit using either orthogonal frequency division multiplexed (OFDM) modulation or direct sequence spread spectrum/complementary code keying (DSSS/CCK) modulation, the method comprising:

collecting information to identify a legacy communication station currently operating in the network;

estimating a first time period (T_{CTS}) to successfully transmit a data packet using the OFDM modulation with request-to-send/clear-to-send (RTS/CTS) protection, estimating a second time period (T_{RTS}) to successfully transmit the data packet using the OFDM modulation with CTS-to-self protection, and estimating a third time period (T_{CCK}) to successfully transmit the packet using the DSSS/CCK modulation without protection; at least one of a first parameter, a second parameter and a third parameter, the first parameter related to a data packet being protected using a first protection mechanism, the second parameter related to the data packet being protected using a second protection mechanism, and the third parameter related to the data packet not being protected; and

selecting one of at least the first and the second protection mechanisms to protect said data packet based on a predetermined criterion related to a successful transmission of said data packet that uses one or more of the parameters the modulation and protection having the shortest of the time period for transmitting the data packet when a legacy communication station has been identified.

2. (Cancelled)

3. (Currently Amended) The method of claim 1 5, wherein said first modulation type comprises orthogonal frequency division multiplexing, and wherein said second modulation type

comprises direct sequence spread spectrum/complementary code keying wherein collecting information comprises the multi-mode communication station being informed in a beacon transmission that one or more legacy communication stations are operating in the wireless network;

wherein the first, second and third time periods are estimated when at least one legacy communication station is operating,

wherein when no legacy communication stations are operating, the first, second and third time periods are not estimated and the method comprises selecting OFDM modulation with RTS/CTS for transmission of the data packet, and

wherein legacy communication stations communicate using DSSS/CCK modulation.

4. (Currently Amended) The method of claim 3 1, wherein said first protection mechanism comprises a request to send/clear to send protection mechanism, and wherein said second protection mechanism comprises a clear to send to self protection mechanism.

wherein collecting information further comprises collecting information to identify any hidden nodes currently operating in the network, and

wherein the method further comprises selecting OFDM modulation with RTS/CTS protection for transmission of the data packet when a hidden node is detected.

5. – 6. (Cancelled)

7. (Currently Amended) The method of claim 3 [[1]], wherein estimating further comprises estimating at least one of said parameters is a power consumption for successful transmission of said data packet associated with each of the time periods.

8. (Currently Amended) The method of claim 3 [[1]], wherein estimating comprises estimating each of the time periods at least one of said parameters based on one or more of a length of said data packet, a collision probability, a rate of a first modulation type, and a rate of a second the associated modulation type.

9. – 11. (Cancelled)

12. (Currently Amended) An A multi-mode wireless communication station operating in a wireless network, the multi-mode wireless communication station configurable to transmit using either orthogonal frequency division multiplexed (OFDM) modulation or direct sequence spread spectrum/complementary code keying (DSSS/CCK) modulation, the station apparatus comprising:

a controller configured able to; collecting information to identify a legacy communication station currently operating in the network;

the controller further configured to estimate first time period (T_{CTS}) to successfully transmit a data packet using the OFDM modulation with request-to-send/clear-to-send (RTS/CTS) protection, estimating a second time period (T_{RTS}) to successfully transmit the data packet using the OFDM modulation with CTS-to-self protection, and estimating a third time period (T_{CCK}) to successfully transmit the packet using the DSSS/CCK modulation without protection; at least one of a first parameter, a second parameter and a third parameter, the first parameter related to a data packet being protected using a first protection mechanism, the second parameter related to the data packet being protected using a second protection mechanism, and the third parameter related to the data packet not being protected and

the controller further configured to select the modulation and protection having the shortest of the time period for transmitting the data packet when a legacy communication station has been identified one of at least the first and the second protection mechanisms to protect said data packet based on a predetermined criterion related to a successful transmission of said data packet that uses one or more of the parameters.

13. (Cancelled)

14. (Currently Amended) The multi-mode wireless communication station apparatus of claim 12 – 16, wherein said first modulation type comprises orthogonal frequency division multiplexing, and wherein said second modulation type comprises direct sequence spread spectrum/complementary code keying; wherein the controller collects information from a beacon

transmission indicating that one or more legacy communication stations are operating in the wireless network;

wherein the first, second and third time periods are estimated by the controller when at least one legacy communication station is operating,

wherein when no legacy communication stations are operating, the first, second and third time periods are not estimated by the controller and the controller selects OFDM modulation with RTS/CTS for transmission of the data packet, and

wherein legacy communication stations communicate using DSSS/CCK modulation.

15. (Currently Amended) The multi-mode wireless communication station apparatus of claim 14 12, wherein said first protection mechanism comprises a request-to-send/clear-to-send protection mechanism, and wherein said second protection mechanism comprises a clear-to-send-to-self protection mechanism, wherein the controller is further configured to collect information to identify any hidden nodes currently operating in the network, and

wherein the controller is configured to select OFDM modulation with RTS/CTS protection for transmission of the data packet when a hidden node is detected.

16. (Cancelled)

17. (Currently Amended) The multi-mode wireless communication station apparatus of claim 14 [[12]], wherein said controller is configured able to estimate each of the time periods at least one of said parameters based on one or more of a length of said data packet, a collision probability, a rate of a first modulation type, and a rate of a second the associated modulation type.

18. (Cancelled)

19. (Currently Amended) The multi-mode wireless communication station apparatus of claim 14 [[12]], wherein the controller is further configured to estimate at least one of said

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parameters is a power consumption for successful transmission of said data packet associated with each of the time periods.

20. – 35. (Cancelled)